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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|--------------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/783,587 | KUBLER ET AL. |
| | Examiner HENRY BARON | Art Unit 2416 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 20 February 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 22-121 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 22-121 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 20 February 2004 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/G6/08)
Paper No(s)/Mail Date 10/19/2006, 11/16/2006, 8/23/2007
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTIONS

HIERARCHICAL DATA COLLECTION NETWORK SUPPORTING PACKETIZED VOICE COMMUNICATION AMONG WIRELESS TERMINALS AND TELEPHONES

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 22 – 23, 25 – 31, 38 – 39, 41 – 50, 61 – 66, 68 – 74, 81 – 83, 85 – 94, 102 – 103, and 105 – 114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman, et al (U.S. Patent 5737328), hereafter Norman, in view of Chu et al (U.S. Patent 5890055).

4. In consideration of claims 22 and 65, Norman teaches of a method of operating a communication system (see Figure 5; read mobile unit (MU) and access point (AP)), comprising: sending via a communication link a message; (Figure 10 read 122 receive find router packet) receiving via the communication link a message comprising call routing information; selecting a call route based upon the call routing information; (16:[0061] read [t]urning now to FIG. 10, the registration procedure from the perspective of each of the access points 42 will now be described beginning with step 120. The registration routine is executed by the processor 56 in the access point. In step 122, the processor 56 determines whether a "find router" packet has been received via the RF section 60 i.e. receiving via the communication link a message comprising routing information, from a mobile unit as discussed above in connection with step 102 in FIG. 9. If not, the processor 56 executes a loop around step 122 until such time as a "find router" packet is received as discussed above in connection with steps 104 and 106 in FIG. 9) selecting a route based upon the call routing information; (20: [0003] read FIG. 12 illustrates the

routine executed by the processor 56 in each access point 42 in order to update the contents of the "current location" table, beginning in step 148. Following step 148, the processor 56 proceeds to step 150 where it checks whether a current location information packet has been received from one of the access points 42. If not, the processor 56 continues to loop through step 150. If yes, the processor 56 temporarily stores the packet in the memory 58 and proceeds to step 152. The processor 56 in step 152 reads the data in the data field of the current location information packet to determine which mobile unit locations are being updated i.e. selecting a call route based upon the call routing information) and transmitting via the communication link a message requesting setup of the call using the selected call route. (16: [0061] read .. When a "find router" packet is received in step 122, the processor 56 proceeds to step 124 whereby the access point 42 transmits "router identification" via the RF section 50 i.e. transmitting via the communication link a message using the selected route.)

5. Norman does not disclose a communication link where a message requests routing of a call; selecting a call route; or requesting setup of the call.

6. Chu teaches of requesting routing of a call; selecting a call route; and requesting setup of the call.(4:[0005] read Base station 110 i.e. access point, may be comprised of hardware and software components that perform call setup and switching functions for calls originated from i.e. requesting routing for a call, or destined for wireless end-user devices 10, 11, 12, 14, 50 and 51. The call setup and switching functions i.e. call route, of base station 110 include allocation and administration of radio channels for active wireless end-user devices, tearing down a connection at the end of a call, coordination of call hand-offs from one microcell site to another.)

7. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the operating communication system teachings of Norman with the call setup and routing teachings of Chu.

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8. In this manner, mobile units in a communication system can initiate a call by registering with an access point that can process and facilitate the calls in a hierachal manner.

9. In consideration of claims 23, 39, 66, 83, and 103, Norman modified teaches the limitations of claim 22, but does not disclose where the call is a voice call.

10. Chu teaches where the call is a voice call. (4:[0050] read .. alternatively, wireless end-user devices 50-53 may be personal multimedia terminals i.e. voice equipped with a wireless network interface adapter that may conform, for example, to the well-known Personal Computer Memory Card International Association (PCMCIA) standards.).

11. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the operating communication system teachings of Norman with the voice call teachings of Chu.

12. In this manner, mobile units in a communication system can initiate a voice call making mobile communication viable.

13. Regarding claims 25, 41, 68, 85, and 105, Norman teaches where the communication link is a wireless link. (3:[0051] read [t]he present invention relates to a network communication system in which the access points providing wireless access to the system reroute misrouted information packets in the event the location of a mobile unit has changed.)

14. With regards to claims 26 – 27, 42 – 43, 61, 69 – 70, 86 – 87, and 106 – 107, Norman modified teaches the limitations of claim 25, but does not disclose where the wireless link communicates using a frequency of approximately 2.4 gigahertz.

15. Chu teaches where the wireless link communicates using a frequency of approximately 2.4 gigahertz. (4:[0055] read [f]or example, repeaters 100-103 may use direct sequence (or frequency hopping) spread spectrum techniques in both the 900 MHz, 2.45 GHz or higher frequency ISM bands for communications with wireless end-user devices 50-53.)

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16. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the operating communication system teachings of Norman with the 2.45 GHz or higher frequency ISM bands teachings of Chu.

17. In this manner, mobile units in a communication system can initiate a voice call making mobile communication viable over a durable and noise tolerant link.

18. In regards to claim 28 – 29, 44 – 45, 63 – 64, 71 – 72, 88 – 89, and 108 – 109, Norman teaches wherein the communication link uses a packet protocol such as the Internet protocol. (12:[0017] read [r]eferring briefly to FIG. 8, the basic format is shown for an information packet as referred to herein. The information packet is generally designated 86 and includes a source address field which includes the address of the device originally transmitting the packet.)

19. Regarding claims 30, 49, 73, 93, and 113, Norman teaches wherein the message requesting routing of a message, i.e. call comprises at least a destination identifier.(12:[0017] read Referring briefly to FIG. 8, the basic format is shown for information packet as referred to herein. The information packet is generally designated 86 and includes a source address field which includes the address of the device originally transmitting the packet. In addition, the packet 86 includes a destination address field i.e. message requesting routing of a call comprises at least a destination identifier, which includes the address of the device which is intended to ultimately receive the information packet.).

20. With respect to claims 31, 50, 74, 94, and 114, Norman modified teaches the limitations of claim 30, where the destination address is a unique address, but does not disclose wherein the destination identifier comprises a telephone number.

21. Chu teaches of wireless telephones that use frequency dependent applications. (4:[0065] read Likewise, communications between repeaters 100 – 103 and wireless telephone sets 10 – 13 may take place at yet another frequency that is application-dependent.)

22. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the operating communication system teachings of Norman with the telephone teachings of Chu.

23. Norman modified where packets whose unique destination identifier comprises a telephone number would enable wireless telephone users to set up calls in order to communicate over a public or private telephone exchange.

24. In consideration of claims 38, 82, and 102, Norman teaches of a method of operating a communication system (see Figure 5; read mobile unit (MU) and access point (AP)), comprising: receiving via a first communication link a message requesting routing; (Figure 10 read 122 receive find router packet) receiving via the communication link a message comprising call routing information selecting a second communication link based upon at least the message requesting routing; (16:[0061] read [t]urning now to FIG. 10, the registration procedure from the perspective of each of the access points 42 will now be described beginning with step 120. The registration routine is executed by the processor 56 in the access point. In step 122, the processor 56 determines whether a "find router" packet has been received via the RF section 60 i.e. receiving via the communication link a message comprising call routing information, from a mobile unit as discussed above in connection with step 102 in FIG. 9. If not, the processor 56 executes a loop around step 122 until such time as a "find router" packet is received as discussed above in connection with steps 104 and 106 in FIG. 9) accepting via the first communication link a message; (20:[0003] read FIG. 12 illustrates the routine executed by the processor 56 in each access point 42 in order to update the contents of the "current location" table, beginning in step 148. Following step 148, the processor 56 proceeds to step 150 where it checks whether a current location information packet has been received from one of the access points 42. If not, the processor 56 continues to loop through step 150. If yes, the processor 56 temporarily stores the packet in the memory 58 and proceeds to step 152. The processor 56 in step 152 reads the data in the data field of the current location

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information packet to determine which mobile unit locations are being updated i.e. selecting a call route based upon the call routing information) and establishing call communication between the first communication link and the second communication link based upon the message requesting setup of a call. (16:[0061] read ..When a "find router" packet is received in step 122, the processor 56 proceeds to step 124 whereby the access point 42 transmits"router identification" via the RF section 50 i.e. transmitting via the communication link a message using the selected route.)

25. Norman does not disclose a communication link a message requesting routing of a call; selecting a call route; or requesting setup of the call.

26. Chu teaches of requesting routing of a call; selecting a call route; and requesting setup of the call.(4:[0005] read Base station 110 i.e. access point, may be comprised of hardware and software components that perform call setup and switching functions for calls originated from i.e. requesting routing for a call, or destined for wireless end-user devices 10, 11, 12, 14, 50 and 51. The call setup and switching functions i.e. call route, of base station 110 include allocation and administration of radio channels for active wireless end-user devices, tearing down a connection at the end of a call, coordination of call hand-offs from one micro cell site to another.)

27. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the operating communication system teachings of Norman with the call setup and routing teachings of Chu.

28. In this manner, mobile units in a communication system can initiate a call by registering with an access point that can process and facilitate the calls in a hierachal manner.

29. In regards to claims 46, 90, and 110, Norman teaches wherein the second communication link is a wired communication link. (Figure 4, second communication link of access point; token ring T1 –T4 i.e. wired)

30. In regards to claim 47 – 48, 62, 91 – 92, and 111 – 112, Norman modified teaches the limitations of claim 46, but does not disclose where the wired communication link comprises a link to a conventional telephone switching network or an analog communication link.

31. Chu teaches where the wired communication link comprises a link to a conventional telephone switching network or an analog communication link (Figure 1; read fixed network i.e. conventional telephone switching network 120 and base station 110 analog communication link).

32. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the operating communication system teachings of Norman with the hardwired network teachings of Chu.

33. In this manner, mobile units in a communication system can initiate a call to an ubiquitous conventional analog telephone network making the system more accessible to the end user.

34. In regards to claim 81, Norman teaches the limitations of claim 65, but does not disclose where the communication device is portable communication device.

35. Chu teaches where the communication device is portable communication device.(3:[0019] read [e]amples of those devices are shown in FIG. 1 as the wireless telephone sets i.e. portable communication devices 10, 11, 12 and 14, and the multimedia workstations 50 and 51 ...)

36. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the operational communication system teachings of Norman with the portable communication device teachings of Chu.

37. Norman modified in this manner, enables users communication access over a free space medium making the network more compelling to use for the end user.

38. Claims 24, 34 – 37, 40, 53 – 57, 59 – 60, 67, 77 – 79, 84, 97 – 101, 104, and 117 – 121, are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman, et al (U.S. Patent 5737328),

hereafter Norman, in view of in view of Chu et al (U.S. Patent 5890055) and in further view of Wadin (U.S. Patent 5491739).

39. In consideration of claim 24, 40, 67, 84, and 104, Norman teaches the limitations of claim 22, but does not provide a user with call routing options using the call routing information; and receiving from the user an indication of a selected call route.

40. Wadin teaches of providing a user with call routing options using the call routing information; and receiving from the user an indication of a selected call route.(1:[0015] read [a] communication system which enables communication link establishment between two Second Generation Cordless Telephones CT-2) having pagers is the Glenayre MODULAR VOICE PROCESSING.TM. System (MVP.TM.) manufactured by Glenayre Technologies, Inc. A calling party dials an MVP access number i.e. receiving from the user an indication of a selected call route, and the MVP responds by sending a prompt requesting the caller to enter the phone number and record heir name. The caller is put on hold and may continue to hold or leave a message. The subscriber is notified of the call waiting and dials an MVP access number and enters a password. The MVP announces the call and the routing options available to the subscriber. The subscriber can choose to connect the call, continue to hold the call, or transfer the call i.e. user with call routing options using the call routing information)

41. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the communication system teachings of Norman with the call options/routing teachings of Wadin.

42. Norman modified in this manner provides mobile subscribers with a compelling set of communication options in setting up a call.

43. With respect to claim 34, 53, 77, 97, and 117, Norman modified teaches the limitations of claim 33, where the destination address is a unique address, but does not disclose wherein the destination identifier comprises a telephone number.

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44. Wadin teaches wherein the destination identifier comprises a telephone number. (3: [0039] read A communication system which enables communication link establishment between two Second Generation Cordless Telephones (CT-2) having pagers .. A calling party dials an MVP access number i.e. destination identifier comprises a telephone number and the MVP responds ...)

45. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the operating communication system teachings of Norman with the telephone teachings of Wadin.

46. Norman modified where packets whose unique destination identifier comprises a telephone number would enable wireless telephone users to set up calls in order to communicate over a public or private telephone exchange.

47. In regards to claims 35 – 36, 54, 78 – 79, 98 – 99, and 118 – 119, Norman modified teaches the limitations of claim 22, but does not disclose of receiving via the communication link a message indicating call status where the call status represents one of a destination busy condition, a destination ringing condition, and a connection established.

48. Wadin teaches of receiving via the communication link a message indicating call status where the call status represents one of a destination busy condition, a destination ringing condition, and a connection established. (1:[0015] read [a] communication system which enables communication link establishment between two Second Generation Cordless Telephones CT-2 ... The caller is put on hold and may continue to hold i.e. call status represents one of a destination busy condition, or leave a message i.e. call status represents a connection established.)

49. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the communication system teachings of Norman with the call options/routing teachings of Wadin.

50. Norman modified in this manner provides mobile subscribers with a compelling set of communication options in setting up a call.

51. In consideration of claim 56 – 57, and 59 – 60, 100 – 101, 120 – 121, Norman modified teaches the limitations of claim 38, but does not disclose where the establishing comprises converting analog representations of voice signals to digital representations of voice signals, and converting digital representations of voice signals to analog representations of voice signals and vice versa.

52. Wadin teaches where the establishing comprises converting analog representations of voice signals to digital representations of voice signals, and converting digital representations of voice signals to analog representations of voice signals and vice versa. (2:[0055] read In FIG. 2, a radio system 200 in accordance with the invention is shown. A detailed discussion of CT-2 systems can be found in two standards documents, the Common Air Interface (CAI) published by The European Telecommunications Standards Institute (ETSI) Version 1.1 Jun. 30, 1991 and MPT 1375 Common Air Interface Specification, May 1989, published by the Department of Trade and Industry, London, which are hereby incorporated by reference. i.e. A/D converters)

53. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the communication system teachings of Norman with the A/D teachings of Wadin.

54. Norman modified in this manner allows analog signals to be converted into digital signals which can further be processed and transported into packets compatible with private and public switching voice communications networks making the system more compelling.

55. Claims 32 – 33, 37, 51 – 52, 58, 75 – 76, 80, 95 – 96, and 115 – 116 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman, et al (U.S. Patent 5737328), hereafter Norman, in view of in view of Chu et al (U.S. Patent 5890055) and in further view of Spiegel (U.S. Patent 5649108).

56. In regards to claims 32, 51, 75, 95, and 115, Norman modified teaches the limitations of claim 22, but does not disclose where the call routing information comprises a cost of use of a communication link.

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57. Spiegel teaches where the call routing information comprises a cost of use of a communication link of (1:[0040] read [t]he routing protocol for connection setup packets is based on a link-state protocol. Specifically, every source node and every intermediate node capable of rerouting obtain a map of the network topology, including the presence of all links, together with a link cost that indicates the desirability of using that link i.e. call routing information comprises a cost of use of a communication link.).

58. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the operation communication system teachings of Norman with the link cost teachings of Spiegel.

59. Norman modified with the link cost teachings of Spiegel would enable to access point to determine from a multitude of routes, that route which is of least cost, thus optimizing network resources in the operation communication system.

60. In regards to claim 33, 52, 76, 96, and 116, Norman teaches wherein the message requesting setup of the call comprises at least a destination identifier.(12:[0017] read Referring briefly to FIG. 8, the basic format is shown for information packet as referred to herein. The information packet is generally designated 86 and includes a source address field which includes the address of the device originally transmitting the packet. In addition, the packet 86 includes a destination address field i.e. message requesting routing of a call comprises at least a destination identifier, which includes the address of the device which is intended to ultimately receive the information packet.).

61. In regards to claims 37, 58 and 80, Norman modified teaches the limitations of claim 22 of exchanging or not information via the communication link (3: [0051] read In a preferred embodiment, each of the access points in the system maintains communication i.e. exchanging information via the communication link with the other access points and informs the other access points when a mobile unit has registered with it.)

62. Norman does not disclose of requesting setup of the call if call status indicating establishment of a connection is received or not i.e. refraining.

63. Chu teaches of requesting setup of the call if call status indicating establishment of a connection is received or not. (4:[0005] read Base station 110 i.e. access point, may be comprised of hardware and software components that perform call setup and switching functions for calls originated from i.e. requesting routing for a call, or destined for wireless end-user devices 10, 11, 12, 14, 50 and 51. The call setup and switching functions i.e. call route, of base station 110 include allocation and administration of radio channels for active wireless end-user devices, tearing down a connection at the end of a call, coordination of call hand-offs from one microcell site to another.)

64. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the operating communication system teachings of Norman with the call setup and routing teachings of Chu.

65. In this manner, mobile units in a communication system can initiate a call by registering with a access point that can process and facilitate the calls in a hierachal manner.

Conclusion

66. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY BARON whose telephone number is (571)270-1748. The examiner can normally be reached on 7:30 AM to 5:00 PM E.S.T. Monday to Friday.

67. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

68. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available

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through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. B./
Examiner, Art Unit 2416

HB

/Ian N. Moore/
Primary Examiner, Art Unit 2416